[The Madonna and Child. By Correggio.]

ESSAYS ON THE LIVES OF REMARKABLE PAINTERS.—No. XXXVII.

Correggio and Giorgione, and their Scholars.

We shall now give some account of Correggio's works. His two greatest performances—the dome of the San Giovanni and that of the Cathedral of Parma—have been mentioned. His pictures, though not numerous, are diffused through so many galleries, that they cannot be said to be rare. It is remarkable that they are very seldom met with in the possession of individuals, but, with few exceptions, are to be found in royal and public collections.

In our National Gallery are five pictures by Correggio: two are studies of angel's heads, which, as they are not found in any of the existing frescoes, are supposed to have formed part of the composition in the San Giovanni, which, as already related, was destroyed. The other three are among his most celebrated works. The first, Mercury teaching Cupid to read in the presence of Venus, is an epitome of all the qualities which characterise the painter; that peculiar smiling grace which is the expression of a kind of Elysian happiness, and that flowing outline, that melting softness of tone, which are quite elusive. "Those who may not perfectly understand what artists and critics mean when they dwell with rapture on Correggio's wonderful *chiaroscuro*, should look well into this picture. They will perceive that in the painting of the limbs they can look through the shadows into the substance, as it might be into the flesh and blood; the shadows seem mutable, accidental, and aërial, as if *between* the eye and the colours, and not incorporated with them. In this lies the inimitable excellence of Correggio."*

This picture was painted for Federigo Gonzago, Duke of Mantua; and for the same accomplished but profligate prince Correggio painted the other mythological stories of Io, Leda, Danae, and Antiope. The Venus in our gallery once belonged to Charles I., and hung in his apartment at Whitehall; afterwards it passed into the possession of the Duke of Alva; then, during the French invasion of Spain, Murat secured it as his share of the plunder; and his widow sold it to the Marquess of Londonderry, from whom it was purchased by the nation. The Ecce Homo was purchased at the same time: it is chiefly remarkable for the fine head of the Virgin, who faints with anguish on beholding the suffering and degradation of her Son; the dying away of sense and sensation under the influence of mental pain is expressed with admirable and affecting truth: the rest of the picture is perhaps rather feeble, and the head of Christ not to be compared to one crowned with thorns which is in the possession of Lord Cowper, nor with another in the Bridgewater collection. The third picture is a small but most exquisite Madonna, known as the Vierge au Panier, from the little basket in front of the picture. The Virgin, seated, holds the infant Christ on her knee, and looks down upon him with the fondest expression of maternal rapture, while he gazes up in her face. Joseph is seen in the background. This, though called a Holy Family, is a simple domestic scene; and Correggio probably in this, as in other instances, made the original study from his wife and child. Another picture in our gallery ascribed to Correggio, the Christ on the Mount of Olives, is a very fine old copy, perhaps a duplicate, of an original now in the possession of the Duke of Wellington.

In the Gallery of Parma are five of the most important and beautiful pictures of Correggio. The most celebrated is that called the St. Jerome. It represents the saint presenting to the Virgin and Child his

* 'Public Galleries of Art,' Murray, 1841, in which there is a history of the picture, too long to be inserted here.

translation of the Scriptures, while on the other side the Magdalen bends down and kisses with devotion the feet of the infant Saviour.

The Dresden Gallery is also rich in pictures of Correggio; it contains six pictures, of which four are large altar-pieces, bought out of churches in Modena; among these is the famous picture of the Nativity, called the Notte, or *Night*, of Correggio, because it is illuminated only by the unearthly splendour which beams round the head of the infant Saviour: and the still more famous Magdalen, who lies extended on the ground intently reading the Scriptures. No picture in the world has been more universally admired, and multiplied through copies and engravings, than this little picture.

In the Florence Gallery are three pictures; one of them, the Madonna on her knees, adoring with ecstasy her Infant who lies before her on a portion of her garment, is given in our illustration.

In the Louvre are three of his works,—the Marriage of St. Catherine being the finest. In the Naples Gallery there are three, one of them a most lovely Madonna, called, from the peculiar head-dress, the Zingarella, or Gipsy. In the Vienna Gallery are two, and at Berlin three; among them the Io and the Leda.

There is in the British Museum a complete collection of engravings after Correggio.

Correggio had no school of painting, and all his authentic works, except his frescoes, were executed solely by his own hand: in the execution of his frescoes he had assistants, but they could hardly be called his *pupils*. He had, however, a host of imitators who formed what has been called the School of Parma, of which he is considered the head. The most famous of these imitators was Francesco Mazzola, of whom we shall speak in the next essay.

SAINT ELMO'S FIRE.

AMONG the many natural phenomena which have excited the superstitious awe of mankind in past ages, but which happily have met with their explanation among the generalizations of modern science, are those remarkable luminous appearances which in certain states of the air invest pointed bodies, such as the masts of ships, and are known to English sailors as Comazants; to the French and Spaniards under the more poetical name of St. Elmo's (or St. Helmo's) Fires; and to the Italians as the Fires of St. Peter and St. Nicholas. The Portuguese call them Corpo Santo; and in some parts of the Mediterranean they are named after St. Clair.

One of the most ancient notices of this phenomenon is recorded in the Commentaries of Cæsar, in his book 'De Bello Africano,' where it is spoken of as a very extraordinary appearance:—"In the month of February, about the second watch of the night, there suddenly arose a thick cloud followed by a shower of hail; and the same night the points of the spears belonging to the fifth legion seemed to take fire." Seneca also, in his 'Quæstiones Naturales,' states, that a star settled on the lance of Gylippus as he was sailing to Syracuse. Pliny, in his second book of Natural History, calls these appearances *stars*, and says that they settled not only upon the masts and other parts of ships, but also upon men's heads.—"Stars make their appearance both at land and sea. I have seen a light in that form on the spears of soldiers keeping watch by night upon the ramparts. They are seen also on the sail-yards, and other parts of ships, making an audible sound, and frequently changing their places. *Two* of these lights forebode good weather and a prosperous voyage, and extinguish *one* that appears single, and with a threatening aspect. This the sailors call *Helen*, but the two they call *Castor and Pollux*, and invoke them as gods. These lights do sometimes, about evening, rest on men's heads, and are a great and good omen. But these are among the awful mysteries of nature." Livy also (c. 32) relates that the spears of some soldiers in Sicily, and a walking-stick which a horseman in Sardinia held in his hand, seemed to be on fire. He states also, that the shores were luminous with frequent fires. Plutarch also records the fact, and Procopius affirms that, in the war against the Vandals, the gods favoured Belisarius with the same good omen.

There is no doubt that during many centuries these appearances continued to be regarded with mingled feelings of admiration and fear. In the record of the second voyage of Columbus ('Historia del Almirante,' written by his son) is a passage which well illustrates the superstitions of the fifteenth century:—"During the night of Saturday (October, 1493) the thunder and rain being very violent, Saint Elmo appeared on the topgallant-mast with seven lighted tapers; that is to say, we saw those fires which the sailors believe to proceed from the body of the saint. Immediately all on board began to sing litanies and thanksgivings, for the sailors hold it for certain that as soon as St. Elmo appears, the danger of the tempest is over. But, however this may be," &c. Herrera also notices that Magellan's sailors had the same superstitions.

Thus it appears that the auspicious view which the ancients took of this phenomenon continued also during the middle ages, modified, however, by the religious faith of the observers. As we approach our own times superstition gradually relinquishes its hold of this appearance; and more matter-of-fact observers, forgetful of the bodies of saints illuminated by wax-tapers, speak of it as it is, and even make it ridiculous by attributing to it a material character which it certainly does not possess. Forbin, sailing among the Balearic Islands in 1696, relates, that during the night a sudden darkness came on, accompanied by fearful lightning and thunder. All the sails were furled, and preparations were made for the storm. "We saw more than thirty Saint Elmo's fires. There was one playing upon the vane of the mainmast more than a foot and a half high. I sent a man up *to bring it down*. When he was aloft he cried out that it made a noise like wetted gunpowder in burning. I told him to take off the vane and come down; but scarcely had he removed it from its place than the fire quitted it and re-appeared at the end of the mast without any possibility of removing it. It remained for a long time, and gradually went out."

We come now to divest the phenomenon of all its romance in the plain statements of two intelligent observers. The first is Lieutenant Milne of the Royal Navy, who, in a communication to Professor Jameson, states that he was off the coast of Brazil in September, 1827; the day had been sultry, and heavily charged clouds had been collecting in the S.W. As evening approached it became very dark; the lightning was very vivid, and was followed by heavy peals of distant thunder. About ten o'clock a light was observed on the extremity of the vane-staff at the mast-head, and shortly afterwards another on the weather side of the fore-topsail-yard. One of the midshipmen, curious to examine this appearance a little more closely, went aloft. He found that it appeared to proceed from an iron bolt in the yard-arm; its size was rather larger than that of a walnut, and it had a faint yellow cast in the centre, approaching to blue on the external edge. On applying his hand to it, it made a noise like the burning of a port-fire, emitting at the same time a dense smoke without any sensible smell. On taking away his hand it resumed its former appearance, but when he applied the sleeve of his wet jacket, it ran

up it, and immediately became extinguished, and did not appear again. The light on the vane-staff retained its position for upwards of an hour, but on account of the heavy rain, and probably also from having been struck by the vane attached to the staff, it went out, but resumed its position after the rain had ceased, although with a less degree of brightness.

In the above account the only circumstance which we do not understand is the dense smoke said to have been emitted by the light. This may perhaps be attributed to the imagination of the observer who witnessed the phenomenon for the first time. Other accounts are given by Lieutenant Milne, but these we need not repeat. He says that the fire usually appeared on metal, such as iron bolts and copper spindles; but, on one occasion, he noticed it on a spindle of hard wood from which the copper had been removed. He states that bad weather always followed the phenomenon.

In a letter from Mr. William Traill of Kirkwall, to Professor Traill, dated 16th of May, 1837, and published in the scientific journals of the time, is an interesting notice of St. Elmo's fire in Orkney. During a tremendous gale in February, 1837, a large boat was sunk, but the crew succeeded in getting her up again and dragging her to the shore. This was accomplished by night, and they had to wait until three o'clock on the following morning until the tide should ebb from her. During this time she was attached to the shore by an iron chain about thirty fathoms long, which did not touch the water; when suddenly Mr. Traill beheld "a sheet of blood-red flame extending along the shore, for about thirty fathoms broad and one hundred fathoms long, commencing at the chain and stretching along in the direction of the shore, which was E.S.E., the wind being N.N.W. at the time. The flame remained about ten seconds, and occurred four times in about two minutes." The boatmen, about thirty in number, who were sheltering themselves from the weather, were apparently alarmed and about to make inquiries when attention was suddenly attracted by a most splendid appearance at the boat. "The whole mast was illuminated, and from the iron spike at the summit a flame of one foot long was pointed to the N.N.W., from which a thunder-cloud was rapidly coming. The cloud approached, which was accompanied by thunder and hail; the flame increased and followed the course of the cloud till it was immediately above, when it arrived at the length of nearly three feet, after which it rapidly diminished, still pointing to the cloud as it was borne rapidly on to S.S.E. The whole lasted about four minutes, and had a most splendid appearance."

The popular opinion is that St. Elmo's fire now appears only on the points of ships' masts; but M. Arago confutes this opinion by adducing a variety of cases which seem to prove that the only reason why the phenomenon is not commonly seen on the tops of church spires, and on the summits of high buildings in general, is simply because people never look out for it; but a few recorded instances are sufficient to prove that good observers only are wanting to make the phenomenon much more common.

M. Binon, who was curé of Plauzet during twenty-seven years, informed Mr. Watson, the electrician, that during great storms accompanied with black clouds and frequent lightnings, the three pointed extremities of the cross of the steeple of that place appeared surrounded with a body of flame, and that when this phenomenon has been seen the storm was no longer to be dreaded, and calm weather returned soon after. In August, 1768, Lichtenberg noticed the Saint Elmo's fire on the steeple of St. Jacques at Gottingen. In January, 1778, during a violent storm accompanied by rain and hail, M. Mongez noticed luminous tufts on many of the most elevated summits of the city of Rouen.

The observation of Cæsar respecting the luminous points of his soldiers' spears has been repeated in modern times; and still more remarkable cases have occurred. In January, 1822, during a heavy fall of snow, M. de Thielaw, while on the road to Freyberg, noticed that the extremities of the branches of all the trees by the road side were luminous, the light appearing of a faint bluish tinge. In January, 1824, after a storm, M. Maxadorf noticed in a field near Cothen, a cart-load of straw, situated immediately under a large black cloud; the extremities of the straw appeared to be on fire, and the carter's whip was also luminous. This phenomenon lasted about ten minutes, and disappeared as the black cloud was blown away by the wind. Rozet, in his work on Algiers, relates, that on the 8th of May, 1831, after sunset, some artillery officers were walking, during a storm, on the terrace of the fort Babazoun at Algiers. Their heads being uncovered, they saw, to their great astonishment, that each one's hair stood on end, and that each hair was terminated by a minute luminous tuft; on raising their hands these tufts formed also at the extremities of their fingers.

All these and various other phases under which the Saint Elmo's fire appears, admit of explanation on the principle which regulates a thunder-storm. The electrical balance between the clouds, a portion of the earth's surface directly opposed to these clouds, and the intermediate air, being disturbed, the particles of air, by a process called induction, increase this disturbance, throwing the clouds and the earth into two highly excited opposite states, which tend more and more to combine, according to the length of the process, until at last a union is effected by what Dr. Faraday calls a disruptive discharge, which is usually accompanied by lightning and thunder.

If it were possible to connect the clouds and the earth by a good metallic conductor, the electrical balance would be restored, and no such violent discharge would ensue. But it sometimes happens that when the air is in a highly excited state, a point projecting into it will effect a partial discharge. This is accompanied by a luminous burst of light and a sort of roaring noise. The experiment can be shown at the electrical machine, and is known as the brush discharge. It usually takes place between a good and a bad conductor; it commences at the root of the brush, and is complete at the point of the rod, before the more distant particles of air acquire the same electrical intensity. Hence, in the foregoing examples, it will be seen that the points of ships' masts, the extremities of church steeples, and even less elevated objects, are all subject to a visitation from Saint Elmo's fire; or, in other words, when placed in highly excited air, an electrical discharge may take place upon them, of so slow a character as to be entirely free from danger. It is the immense velocity with which lightning travels, which causes it to commit such fearful havoc when it strikes badly conducting substances.

A Spanish Kitchen.—The kitchen-fire in Spain is usually made in the following manner. A square portion of the floor is allotted as hearth. On this are laid logs of wood, six or seven feet in length, with their ends together, like the sticks of a gipsy fire. As they are consumed, these logs are pushed forward till burnt out. Above is the chimney, formed of boarding in the shape of an immense funnel, with the broad part downwards, and reaching within about seven feet of the fire. The funnel conducts to a narrower orifice above. Meat is roasted, and all the cookery is carried on by the mere use of the burning wood on this primitive hearth. The fire is usually of enormous size; and at the inn of Roncesvalles a bench occupied two sides, on which I was not sorry to take an half-hour's seat after my supper, the elevation of the spot having made the air chilly.—*Travels in France and Spain, by the Rev. F. Trench.*

[Cassetta de' Burattini.]

CASSETTA DE' BURATTINI.

The box of puppets (Burattini or Fantoccini), or what is, or was, legitimately called a puppet-show (from the French word *poupée*), was more frequently exhibited at Rome and the other cities of Italy than the Magic Lantern. There was more life and variety in it. Some of the burattini played comedy, some tragedy and Scripture pieces, which last bore a close family resemblance to the old Mysteries and Moralities of the English stage. The death of Judas Iscariot was a favourite subject; and particular attention was paid to the hanging scene, and to the last scene of all, where little devils with horns and tails came to clutch the traitor and apostate:

"Piombò quell' alma a l' infernal riviera,
E si fè gran tremuoto in quel momento."

"Down went the sinner loaded with his crime—
Down to deep hell; and earthquakes mark'd the time."

Even with the small box-puppets, or Burattini, playing in the streets by broad daylight, great effects have been produced upon the Roman populace and the peasants of the neighbourhood; and critics have been heard criticizing the piece and the tiny puppets with all the gravity and acumen of Partridge in 'Tom Jones,' who loved a puppet-show "of all the pastimes upon earth." Much ingenuity was displayed by the ventriloquist and puppet-mover inside the curtains, who not only moved the various figures and spoke for his personæ dramatis, but, in many cases, invented and extemporized the dialogues which were put into their mouths. But far grander than these perambulatory exhibitions were the plays performed within doors in Fantoccini-Theatres, or in large rooms converted, for the nonce, into theatres of that sort. There was such a theatre at Rome in our time, though not quite in so flourishing a condition as one at Naples, which stood at the corner of a street, opposite to the Castello Nuovo, on the broad way which leads from the port and that seat of fun and frolic the "Molo" towards the Strada Toledo and the courtly part of the city. In these puppet theatres there was a regular stage, with green baize curtain, footlights, and other accessories. [We were going to say scenes; but as the three unities of action, time, and place were strictly adhered to, there was only one scene used for one play; and as by a little stretch of the imagination this one scene—indistinct by age and long use—might be taken just as well for a church as for a castle, or for a forest as for a cave, or for any other thing in hand, this one scene served for all manner of pieces, from the death of Cain to the exploits of Rinaldo or the misadventures of Policinella.] But here, as was the case with Partridge's friend, the figures were as big as the life, or nearly so, and the whole puppet-show was performed with great regularity and solemnity. Some orators might have studied with advantage the striking attitudes into which these figures were pulled and twitched by the invisible movers of the wires; for here there was more than one Pygmalion to give life, motion, and speech to the burattini; and the machinery was far more complicate and perfect than in the street shows. And some good people there were who thought that the automata were more natural and far more impressive than the living actors and actresses of the penny theatres in their neighbourhood. One old boatman we knew who came from Sorrento, and who would never attend any other theatre than the puppet-show, to which he went regularly twice or thrice a week; but we believe that this arose out of some religious or moral scruples. The owner of that puppet theatre was an ingenious man, and one that had a high notion of the dignity of his profession. When very hard pressed, he could not deny that a representation by living actors and actresses had some advantages over a representation by dolls and puppets. "But," he would say, "there is one decided advantage which I, as Impresario, have over my rivals: *they* are always tormented by the wants, the caprices, and rebellions of their company; but my little men and women of wood and wire and rags never give me any such trouble: *they* are often made to suffer martyrdoms by the intolerable tyranny of their prima donna, or of their chief tyrant, or primo amoroso; with them it is always happening that this lady has got a cold and won't sing—that this gentleman is in love, or in drink, or put under restraint for debt, and can't act; and then the jars about the distribution of parts, and the deadly jealousy and hatreds that break out, and ofttimes mar the best pieces! But *I* know none of these sore troubles: my company have no caprices, no jealousies, no tyranny, no wants, no colds; they never quarrel with me or among themselves, and, above all things, they never ask me for money:—they are never missing at play or rehearsal; and when they are done playing, *Paffati!* (whack) I throw them into my boxes

and lock them up! Ministers of State, who manage kingdoms, have been put to it how to manage a royal company of actors and actresses. A child might manage my Fantoccini."

In the Elizabethan age, when so much was brought from Italy to grace our literature and improve us in the arts, the Fantoccini, if not then introduced for the first time, appear to have become rather popular in England. It should appear, however, that these first puppets were very diminutive in size, and were exhibited only at fairs and wakes. Bartholomew Fair, in London, was where they shined most. Their plays were then called "motions." Ben Jonson makes his Bartholomew Fair puppet-showman say—"Oh! the motions that I, Lanthorn Leatherhead, have given light to in my time, since my master Pod died! Jerusalem was a stately thing, and so was Nineveh, and the city of Norwich, ... But the Gunpowder Plot, there was a get-penny!"* The same great personage says—"Your home-born subjects prove ever the best, they are so easy and familiar: they put too much learning in their things now-a-days!" Yet it should seem that Eastern and Scriptural subjects formed by far the greater part of the stock of these puppet plays. In another place Ben Jonson names one puppet play which enjoyed a long run, and which he calls "A new motion of the City of Nineveh, with Jonas and the Whale."† These tiny puppets evidently aspired to no higher fame than such as could be gotten from children and the poorer people. But the bigger puppets, the Fantoccini, that were as large as life, or nearly so (like those of our Neapolitan manager), were destined to obtain the admiration of the grown-up fashionable world, and of full-grown royalty itself. Some Italian speculators of this last kind found their way to England in the time of Charles II. In the summer of 1662 Samuel Pepys saw the puppet plays in Covent Garden; and in the autumn of that year they were exhibited before King Charles and the court in the palace of Whitehall. It was nearly at the same time that women were first introduced upon the English stage to perform the female parts, which had hitherto been done by boys and young men, the latter having always been clean shaved before they put on the dress of Desdemona or Ophelia, or of such other delicate part as they might have to play. But this nearer approach to real life did not affect the popularity of the wooden actors. The Italian puppet-shows took amazingly, and continued for many years to be frequented by the fashionable world, and a large part of town. With many these shows even rivalled the Italian opera of that day; and Signor Nicolini Grimaldi, that admirable Neapolitan singer and actor, was often deserted for his wooden countryman Policinella and the other puppets that played tragedy and comedy.

[To be continued.]

ATMOSPHERIC RAILWAY.

(From the Supplement to the Penny Cyclopædia.)

In a brief sketch of the history of this invention, in a lecture delivered by Mr. Vignoles (then professor of civil engineering at University College, London), to the Royal Cornwall Polytechnic Society, in October, 1842, that gentleman observed that the idea of producing motion by atmospheric pressure was conceived by Papin, the well-known French engineer, nearly two centuries since; and that, after slumbering for more than a century, the subject had been successively taken up by Messrs. Lewis, Medhurst, Vallance, and Pinkus, and lastly by Mr. Clegg, by whom, in connection with the late Mr. Jacob Samuda, the practicability of this mode of locomotion has been fully proved. Of the connection of the name of Lewis with this invention the writer has no other intimation; but the publications of the late Mr. Medhurst, who was a practical mechanician or engineer, carrying on business in London, and known as the inventor of an ingenious printing-press, show that he not only cherished the idea of locomotion by atmospheric pressure for many years, but also devised, among other plans for its accomplishment, one which, excepting in practical detail, greatly resembles the present atmospheric railway. Medhurst published a short account of his scheme in 1810, under the title of 'A New Method of Conveying Letters and Goods by Air,' and in 1812 he issued another pamphlet of 'Calculations and Remarks,' to prove the practicability and advantages of such a mode of conveyance; but, as he observes in a more recent work, "these publications met with that indifference and contempt which usually attend all attempts to deviate so widely from established customs." In the pamphlet from which this remark is quoted, which was published in 1827, entitled 'A New System of Inland Conveyance for Goods and Passengers,' is a fuller account of the various modes in which it was proposed to accomplish the desired object; the principal of which were, first, the construction of an air-tight tunnel of sufficient magnitude to admit the passage of carriages within it, running upon iron rails, and propelled by forcing in air behind them by pumping machinery, the carriages being made so nearly to fit the tunnel that the air thus forced in could not pass them, but must act upon them as upon a piston; secondly, the propulsion of such carriages, in certain cases, in the reverse direction, by exhausting the tunnel in front of them, instead of forcing in air behind them; thirdly, the use of a smaller tunnel, containing what may be termed a piston-carriage for the conveyance of goods within the tube or tunnel, and having a kind of valve which would open during the passage of the piston-carriage so as to allow a rod from it to pass out of the tunnel, and afford the means of propelling a second carriage, for passengers, running upon a railway either above or alongside of the tunnel, in the open air; and, fourthly, the construction of a railway or tram-road, in the centre of which should be laid a still smaller air-tight tube, containing a travelling piston which should be connected, as in the last-named contrivance, with an exterior carriage. One of the modes in which it was proposed to connect the carriage outside the tube or tunnel with the piston within it, was by an air-tight water-valve, which however would only have been applicable on a perfect level, and with a very low amount of atmospheric pressure; and another, applicable to all levels, was formed by thin elastic sheets of iron or copper, shutting down upon a soft substance, so as to form an air-tight joint, but capable of being readily lifted up to allow the passage of the connecting-bar, by the action of a wheel connected with the piston. In all cases Medhurst appears to have contemplated moving the piston by forcing air into the tube behind it, and thereby forming a plenum, in preference to forming a vacuum by exhausting the tube in advance of it; and he seems also to have formed a very inadequate idea of the degree of atmospheric pressure necessary to produce rapid motion, imagining that in a tunnel of thirty feet sectional area carriages might be propelled at the rate of sixty miles per hour without the condensation of the air becoming uncomfortable to the passengers, who, according to his original plan, would not have been shielded from its effects.

Before the publication of the last-mentioned pamphlet of Medhurst, but many years after the original promulgation of his scheme, Mr. Vallance, of Brighton, drew public attention to a smaller project, which, being brought forward at a season of extraordinary spe-

* 'Bartholomew Fair.' † 'Every Man out of his Humour.'

culation, excited much interest, as well as no little ridicule. Vallance's scheme, which was fully explained in a pamphlet published by him in 1825, entitled 'Considerations on the expedience of sinking capital in Railways,' was, like Medhurst's original design, for conveying passengers along a railway laid within an air-tight tunnel, which he proposed to construct either of cast-iron or of vitrified clay resembling common brickwork, but less permeable to air; but knowing that experiments had proved a very great loss of power to result from the attempt to impel air through a long pipe, he proposed to set the piston-carriage in motion solely by exhausting the tunnel in advance of it and suffering the full pressure of the atmosphere to act upon its rear. This plan, which was patented in 1823, was brought into experimental operation at Brighton upon a sufficiently large scale to prove the possibility of so singular a mode of transport, but, had there been no other difficulties, the objections of the travelling public to transmission in a dark close tunnel would have proved sufficient to prevent its general adoption.

About the year 1835 the subject was revived in consequence of a patent being taken out by Mr. Henry Pinkus, an American gentleman residing in England, for an apparatus which he called the Pneumatic Railway, and which, as originally proposed, was to consist of a cast-iron tube from thirty-six to forty inches diameter internally, of an average thickness of three-quarters of an inch, and having a longitudinal slit or opening from one to two inches wide along what was, when laid in its proper position upon the railway, intended to be its upper side. Two ribs or cheeks, cast with the tube, along the sides of this opening, formed a channel or trough from four to five inches wide and deep, which, in order completely to close in the tube or tunnel, and prevent the ingress of air, was filled with a valvular cord of some soft and yielding substance strengthened by being formed upon a peculiarly constructed iron chain, so arranged that when the valve was laid in its place in the trough, the soft matter should completely exclude the passage of air, while the iron portion of the valve, lying upon and covering the edges of the vertical cheeks, should at once protect the valvular cord from injury and prevent its being forced into the tube by an external pressure. Within this tube was placed a piston-carriage, denominated the dynamic traveller, which was impelled forward by the pressure of the atmosphere in its rear whenever, by the action of pumping machinery connected with the tube, a partial vacuum was formed in front of it. In the rear of the piston the dynamic traveller carried an apparatus for lifting the valvular cord out of its seat, so as to allow of the free passage along the slit or opening of a connecting bar by which the dynamic traveller was placed in communication with an external carriage, called the governor, to which the vehicles to be drawn were attached; and immediately after the passage of this connecting-rod the valve was restored to its place, its sides being fresh lubricated by an apparatus attached to the governor, and the whole being pressed firmly down by a wheel or roller. In this form of the apparatus the governor and the carriage attached to it ran upon rails attached to or cast upon the external sides of the pneumatic tube; but in a subsequent modification of the invention the tube was greatly reduced in size, and laid down in the middle of the track of an ordinary railway, and a kind of pneumatic locomotive engine was substituted for the governor, the pistons of this engine working after the manner of a common locomotive engine, excepting that, in lieu of steam, a motive power was to be obtained from the atmosphere, by the aid of the rarefied tube, with which the engine was placed in communication. The former plan was publicly exhibited in a small model, and an experimental railway was partially laid down near the Kensington Canal for the trial of the latter upon a practical scale, under the auspices of an association formed for bringing the pneumatic railway into use; but, from what cause we are not aware, the matter fell through.

The failure which had attended so many attempts to bring pneumatic transport to a practical trial led to a very general feeling of distrust, when, in 1840, Messrs. Clegg and Samuda brought forward their "Atmospheric Railway;" but after some satisfactory experiments upon a more limited scale, those gentlemen arranged with the proprietors of the then unfinished Thames Junction or West London Railway for the temporary use of a portion of their line near Wormwood Scrubbs, upon which they laid down about half a mile of railway, with a rising gradient partly of one in one hundred and twenty, and partly of one in one hundred and fifteen, and with the disadvantage of a very badly laid track formed of old contractor's rails (which, it is curious to observe, had formed part of the original rails of the Liverpool and Manchester Railway); yet, notwithstanding these and other unfavourable circumstances arising from the imperfection of the machinery, and the shortness of the line, which would not admit of the attainment of a maximum speed, the results of the first trials, on the 11th of June, 1840, showed a maximum speed of thirty miles per hour with a load of five tons nine hundredweight in one carriage, and of twenty-two miles and a half per hour with a load of eleven tons ten hundredweight in two carriages. This experimental line, which had an atmospheric tube of only nine inches diameter, was publicly exhibited in action at intervals, for many months, during which it was visited by many eminent engineers of this and other countries, and its success was considered by the directors of the Dublin and Kingstown Railway to be so decisive, that they determined to adopt the atmospheric mode of working upon a projected extension of their line from Kingstown to Dalkey, the gradients and curves of which rendered it unsuitable for working by locomotive engines. This line, which was so far completed as to be ready for working in August, 1843, is at present (December, 1844) the only line of atmospheric railway in existence, the first-mentioned line having been removed to allow the completion of the West London Railway, which is worked by locomotives; but though no other lines are yet made, the London and Croydon Railway Company have recently obtained parliamentary sanction to a plan for laying down a line of atmospheric railway, alongside of their present road, from London to Croydon, and making an extension of the same from Croydon to Epsom, by which arrangement there will be a complete atmospheric line of about eighteen miles, half of which will run parallel with and close to a railway worked by locomotive engines, thus affording the most satisfactory data for comparison between the two modes of transport.

[To be continued.]

CHAUCER'S CANTERBURY TALES.

III.—The Knight's Tale—*continued.*

In the grove, at the place and time appointed, Arcite and Palamon met:—

> Then changen gan the colour of their face;
> Right as the hunter in the regne of Thrace
> That standeth at a gappe with a spear,
> When hunted is the lion or the bear,

And heareth him come rushing in the greves,*
And breaking both the boughès, and the leaves,
And thinketh—Here cometh my mortal enemy,
Withouten fail he must be dead or I;
For either I must slay him at the gap,
Or he must slay me, if that me mishap:—
So fareden they in changing of their hue.

There was no "Good day" exchanged, no saluting; but presently helping each other to arm, they rushed to the combat with their sharp spears—Palamon appearing like a wild lion, and Arcite as a cruel tiger.

Theseus that morning rode forth with Hypolita and Emily, and his court, all clad in green, to hunt, and by chance came to the very grove where the two knights were fighting; and where

Under the sun he lookèd, and anon
He was 'warè of Arcite and Palamon,

and saw that

The brighte swordes wenten to and fro
So hideously, that with the leaste stroke
It seemèd that it woulde fell an oak.

Rushing between the combatants, Theseus commanded them to desist, and to tell him what bold men they were who thus ventured to fight without any proper officer standing by. Palamon hastily answered, Sire, what needeth many words? We have both deserved death. Two miserable wretches are we, weary of our lives; and as thou art a rightful lord and judge, show mercy to neither of us. Slay me first for charity's sake, but slay my companion also. This is Arcite, who came to thy gate calling himself Philostrate, and who has so long deceived thee, that thou hast made him thy chief squire. This is he that loves Emily. And since the day is come that I must die, I confess plainly that I am Palamon.

Theseus said, This is a short conclusion, and I will record it. There is no need to humiliate you with the hangman's cord; you shall die by the weapon of mighty Mars.

Then began the queen, and Emily, and all the ladies of the train, to weep for pity. Have mercy, lord! they cried, falling upon their knees. And at last the fierce mood of Theseus was assuaged. He began to think that every man will help himself in love, if he can, and he looked with compassion upon the women, who wept continually. So when his ire had departed

He gan to looken up with eyen light,

and spoke thus:—

The God of love, ah, *Benedicite!*
How mighty and how great a lord is he.
Against his might, there gainen non obstácles,
He may be clep'd a God, for his miráckles,
For he can maken at his owen guise,
Of every heart, as that him list devise.

Look here upon this Arcite and this Palamon! They were out of prison, might have lived royally in Thebes—they knew I was their mortal enemy, and that their death is the penalty for their coming into my hands, yet hath Love brought them hither:—

Who maye be a fool, but if he love?
Behold for Goddes sake, that sittest above!
See, how they bleed!

And, best of all, she, for whom they do all this, knows no more of it than a cuckoo or a hare. But I, in my time, have been a servant of Love, and am aware how sorely it can oppress a man. So I forgive you this trespass, and you shall both swear never more to make war upon me or my beloved country, and to become as far as possible my friends. The knights swore as he wished.

To speak of wealth and lineage, continued Theseus,

* Groves.

each of ye were worthy of Emily, though she were a duchess or a queen, but ye may not both wed her:

one of you, all be him loth or lief,*
He must go pipen in an ivy leaf.

Now hearken to what I propose. Each of you shall go where he pleases, and this day fifty weeks hence return with a hundred knights armed ready for battle. And this I promise, as I am a knight, that whoever with his hundred shall slay his antagonist or drive him out of the lists, shall have Emily to wife. I will make the lists here in this place. And God so judge me as I shall judge truly.

Who looketh lightly now but Palamon?
Who springeth up for joye but Arcite?
Who could it tell, or who could it endite,
The joye that is makèd in the place,
When Theseus hath done so fair a grace?

And now Theseus goes briskly to work to prepare the royal lists; never before in the world was there so noble an amphitheatre as the one he built. Its compass was a mile about. It had walls of stone, with ditches outside. The shape was round, and the seats were so arranged that no man hindered another from seeing. On the eastern and western sides were gates of marble. In brief, never was there raised in such limits such a place; for all the most skilful artificers, painters, and sculptors of the kingdom were engaged by Theseus for its erection.

For the performance of rites and sacrifices, Theseus raised an oratory on the eastward gate in worship of Venus; and another on the western gate in remembrance of Mars; and a third in a turret on the wall, of white alabaster and red coral, in worship of Diana. But I must not forget to speak of the noble carvings and pictures, or the shape and countenances of the figures, that were in these three oratories.

First in the temple of Venus mayst thou see,
Wrought on the wall, full piteous to behold,
The broken sleepes, and the sikes† cold,
The sacred tearès, and the waimentings,‡
The fiery strokès of the désirings,
That Lovè's servants in this life enduren;—
The oathès that their covenants assuren.
Pleasance and Hope, Desire, Foolhardiness,
Beauty and Youth, ——— and Richéss,
Charmès and Force, Lesings and Flattery,
Dispencè,§ Business, and Jealousy,—
That weared of yellow goldes‖ a garland,
And had a cuckoo sitting on her hand;
Feastès, instrúments, and carolès and dances,
Lust and array, and all the circumstánces
Of Love, which that I reckon and reckon shall
By order weren painted on the wall,
And more than I can make of mentïon;
For sothly¶ all the Mount of Citheron,
There** Venus hath her principal dwelling,
Was showèd on the wall in pórtraying,
With all the garden, and the lustiness.††
Nought was forgotten:—The porter Idleness;
Ne Nárcissus, the fair of yore agone;
Ne yet the folly of King Solomon;
Ne yet the greate strength of Hercules;
Th' enchantment of Medea and Circés;
Ne of Turnús the hasty fierce courage,
Ne riche Crœsus caitif in servage.
Thus may ye see that wisdom nor richéss,
Beauty nor sleighte, strength nor hardiness,
Ne may with Venus holden champarty;‡‡

for as she pleases she may guide the world. A thousand more examples might be given, but let these suffice. The statue of Venus was truly glorious, as she appeared floating on the sea, partially covered by the green and transparent waves:

* Glad. † Sighs. ‡ Lamentations. § Expense.
‖ The flower called the turnsol, which is yellow.
¶ Truly. ** Where. †† Enjoyment or delight.
‡‡ Share of power.

A citole* in her right hand hadde she,
And on her head, full seemly for to see,
A rosè garland fresh and well smelling,
Above her head her doves flickering.

In the temple of mighty Mars the Red, the wall was painted like the interior of the great temple of Mars in Thrace, where the god hath his sovereign mansion.

First on the wall was painted a forèst,
In which there wonneth† neither man nor beast,
With knotty, gnarry,‡ barren trees old,
Of stubbes sharp and hideous to behold,
In which there ran a rumble and a swough,
As though a storm should bursten every bough;
And downward from a hill, under a bent,§
There stood the temple of Mars armipotent,
Wrought all of burnèd steel, of which th' entrée
Was long and strait, and ghastly for to see;
And thereout came a rage and such a vise,‖
That it made all the gatès for to rise.
The northern light in at the doore shone,
For window on the wall ne was there none,
Through which men mighten any light discern.
The door was all of adamant etern',
Yclenchèd overthwart and endelong
With iron tough; and for to make it strong,
Every pillar the temple to sustene¶
Was toune-great, of iron bright and sheen.
There saw I first the dark imagining
Of Felony, and all the compassing;
The cruel ire, red as any glede,**
The pick-pursè, and eke the palè drede,
The smiler with the knife under the cloak;
The shepen†† burning, with the blacke smoke;
The treason of the murdering in the bed;
The open war, with woundès all be-bled;
Conteke‡‡ with bloody knife, and sharp menáce.
All full of chirking was that sorry place!
The slayer of himself yet saw I there,
His heartè's blood hath bathèd all his hair;
The nail ydriven in the shode§§ on height;
The colde death, with mouth gaping upright.
Amiddes of the temple sat Mischance,
With discomfort and sorry countenance;

Yet saw I Woodness* laughing in his rage,
Armed Complaint, Outhees,† and fierce Outráge;
The carrion‡ in the bush with throat ycarven,
A thousand slain, and not of qualm ystarven;§
The tyrant, with the prey by force yreft;
The town destroyèd—there was nothing left.
Yet saw I burnt the shippes hoppesteres;‖
The hunt¶ ystrangled with the wilde bears;
The sow fretting** the child right in the cradle;
The cook yscallèd for all his long ladle:
Nought was forgot by th' infortunè of Martè.††
The carter overridden with his carte,
Under the wheel full low he lay adown.

Above, painted in the tower, Conquest sat, in great honour, with a sword suspended by a thread over his head. The statue of Mars, armed, looked grim, and a wolf stood before him at his feet,

With eyen red, and of a man he eat.

The walls of the temple of Diana were painted everywhere with stories of the hunt and of shame-faced chastity: of Calisto, who offended Diana and was turned into a bear, and afterwards into the load-star; of Acteon pursued by his own hounds for having whilst hunting discovered the goddess bathing; of Atalanta, and Meleager, and many others, who hunted the wild boar, and suffered in consequence from Diana much care and misery. The goddess sat on a hart full high,

With smalle houndès all about her feet;
And underneath her feet she had a moon,
Waxing it was, and shoulde wanen soon.
In gaudy green her statue clothèd was,
With bow in hand;

and arrows in the quiver at her back.

Thus were the lists made and arranged by Theseus, at his great cost; and wondrously the whole pleased him. And now the day approached of the return of Palamon and Arcite.

[To be continued.]

* A musical instrument, supposed to be a kind of dulcimer.
† Dwelleth. ‡ Gnarled. § Steep, or declivity.
‖ Rush. ¶ Sustain. ** Burning coal.
†† Stable. ‡‡ Contest. §§ Hair of the head.

* Madness. † Outcry. ‡ A putrefying body of the dead.
§ That is to say, not *ystarven*, or dead, from disease, or *qualm*.
‖ The meaning seems to be the ship was burnt even as she—*ster*, danced—*hoppe*, on the waves; for of those two Saxon words that we have italicised *hoppesteres* appears to have been formed
¶ Hunter. ** Devouring.
†† The Italian form of the word Mars.

The Combat interrupted.